VOL. 2 NO. 2

AGRICULTURAL NEWS LETTER

Giving information on new developments of interest to agriculture, based on the work done by chemists and technical men of the du Pont Company and its subsidiary companies.

Also news on field and agricultural experiment station work in the control of plant diseases and crop pests.

We shall be glad to send you articles on subjects in our field, written in collaboration with chemical experts, if you will write us stating what subjects you wish discussed.

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F. J. Byrne, Editor.

March 15, 1934.

TREATMENT OF OATS TO CONTROL SMUT

The 1933 annual report of the Illinois Agricultural Experiment Station, College of Agriculture, University of Illinois, by W. H. Mumford, dean and director, states: "A new product, ethyl-mercury-phosphate, tested for one year by Benjamin Koehler, Crop Pathology, promises to control oats smut more cheaply than materials heretofore used. Previously the best yields had consistently been obtained from ethyl-mercury-chlorid, but one objection has been its high cost. Ethyl-mercury-phosphate is much cheaper, and on the basis of one year's results, gives good control and just as high yields.

"Even at the extraordinarily low average price of fifteen cents a bushel in 1932, it paid farmers in Illinois to treat the seed to control smut and thereby save losses in yield. These experiments demonstrate again that proper control of diseases is one of the surest ways for grain growers to cut production costs and improve quality.

"Ilinois grows an average of more than four and one quarter million acres of oats annually, and on farms where the seed is not treated there is always a costly loss from smut. The average infection has been found to be about 4.9 percent of the heads, but the loss is greater than the percentage of infected heads would indicate.

"Of many disinfectants tested, only formaldehyde and certain organic mercury compounds such as ethyl-mercury-chlorid and ethyl-mercury-phosphate, have merited consideration from a practical standpoint. Some compounds that controlled smut did not give satisfactory yields."

MANGANESE ARSENATE

by E. B. Alvord,
New Products Division,
Grasselli Chemical Co.

The ability of many plants to take certain fertilizing elements into their nutritive systems through the leaves and give practically the same returns as if these plant food elements were supplied to the root system has been recognized by botanists for some time.

This fact may be made use of in the development of a new insecticide by the Grasselli Chemical Co. Manganese, as most agriculturists know, is a very essential plant food element which is sometimes unavailable to plants or totally lacking in certain excessively sweet soils. When the soil is brought practically to neutrality and manganese supplied to the plant in an available form, startling results usually occur in improved color and health of the plants and increases in yields.

In Grasselli's preliminary experiments during 1933 on cucumbers under authoritative investigators preliminary trials of manganese arsenate in comparison to other standard combinations ranked the manganese arsenate plots first in both vine growth and yield records and the vines were of a deep green color as a contrast to lighter color of other plots. The vine growth was outstanding in the plots treated with Manganese Arsenate during the entire season and produced the earliest fruits according to the experimenters.

The striped cucumber beetle, and flea beetles present during the season were controlled satisfactorily. No bacterial wilt appeared in these plots.

While this one experiment is a preliminary step in the study of Manganese Arsenate as a source of manganese for plants - it is the opinion of the experimenters that the appearance of the plants, increased vine growth, and greater yield indicated that the plants had found it possible to take in part of the manganese and additional study will be carried on this year on this question.

GROWING EARLY FLOWER AND VEGETABLE PLANTS UNDER COVER

Many amateur gardeners are not aware that they can lengthen the season for their flowers and vegetables by the simple device of starting these plants under cover. Mr. Harry R. O'Brien, author of the diary of a dirt gardener and lecturer and student of the growing of flowers and vegetables, has prepared a great deal of data giving the results of tests in the art of gardening. The following is based on Mr. O'Brien's work.
Editor's Note.

With the approach of spring, thousands of gardeners, anxious to get busy with outdoor planting and sowing of flowers and vegetable seed, will be glad to know that there is a way to outwit the deadly frost menace and extend the garden season from three to four weeks, even in the smallest garden. This is done simply by making use of special covers under which seeds can be started, protected from the weather, then transplanted into the garden.

To do this, it isn't necessary to have a greenhouse. With a small, easily constructed hotbed and coldframe, any average home gardener, can grow flower and vegetable plants as readily as the commercial grower.

By keeping plants under cover through the germination period and early stages of growth, stocky annual flowers, ready to set out in the open, can be ready by the time the seed would be sown outdoors normally.

For annual flowers, a coldframe will be sufficient in most parts of the country. Many vegetable plants can also be grown in one, providing the crop is not wanted too early. The plants can be transplanted directly from this coldframe into the field.

For best use with vegetable plants, however, a combination of hotbed and coldframe is necessary. The seeds are first sown in the hotbed, then transplanted to the coldframe as soon as they can be handled. From there, they go out to the garden when they have reached the proper size and when the weather is suitable.

By using various types of plant covers, seedlings may be transplanted to the garden earlier than if they were left uncovered. Also seed can be sown in the garden much ealier than under normal conditions if given the protection of these small covers.

These plant covers can be readily made if "Cel-O-Glass" is used. This material is flexible and easily cut with scissors. Garden specialists also recommend it as a covering for hotbeds and coldframes as it is light, will not break and will withstand hail, rain and wind storms.

THREE CHICKS MAKE A PULLET

By Willard H. Allen, former poultry specialist of the New Jersey Experiment Station, New Brunswick, N. J.

For every pullet put in the laying house in the fall, one must figure on starting three chicks in the spring. One chick usually dies, one is a cockerel and the third matures into a strong, healthy pullet.

Now is the time to consider and plan your purchases of chicks and brooding equipment for the spring. If one is planning to have one hundred pullets next fall, he should figure buying three hundred chicks. In buying three hundred chicks one must consider, where to buy, time to buy and lastly, the price.

During these days of money shortage, the first thought in the minds of farmers when it comes to chick purchasing is price. This is the wrong way to reason. A nickel chick is usually nothing more than the result of an ordinary egg put in an incubator and hatched. This is not enough. A quality chick is the result of careful selection and management of a breeding flock, years of breeding and a program of disease prevention. The chick cost in the production of pullets is so small that the smart farmer will pay a reasonable price to get quality. Ten cents is a reasonable price to pay for a chick in 1934.

The time of arrival of chicks at the farm and of putting under the brooder stoves is important. It takes five to six months to produce a mature pullet. If one desires pullets to be laying during the months of high prices, order chicks for March and April delivery. Best prices for eggs are obtained during the months of September, October and November.

Before the rush of spring work starts, it is well to prepare the brooder house for the arrival of the chicks. While the ground is frozen, move the house to new clean ground, away from where the chicks were brooded last year. Look to the windows and roof - they usually need repairs. See that the roof does not leak. Probably it needs new waterproof paper or painting.

The general practice on most farms where poultry keeping is made an important part of the farm business is to use "Cel-O-Glass" for windows. This material lets in the ultra-violet rays of sunlight which ordinary glass keeps out. These rays of sunlight are indispensable in preventing leg weakness and obtaining good growth in chicks.
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Lastly the brooder stove. It should be clean and in good working condition before the chicks arrive. New stove pipe is usually needed each year. See that the thermostat is in perfect order, otherwise a new one should be purchased from the local hardware store.

Note:- A series of two articles by Mr. Allen on poultry raising is available by writing to the Editor of Agricultural News Letter.

UNITED STATES DEPT. OF AGRICULTURE
ON FORMALDEHYDE FOR SEED TREATMENT

"Smut in oats causes a large annual loss that can be almost wholly prevented by treating the seed. There are two kinds of smut of oats - loose smut and covered smut. Both are controlled by treating the seed with formaldehyde. The treatment is cheap, easy to apply, and very effective. Its use, therefore, is advised whenever it is known or suspected that the seed came from a smutty crop or from a crop grown near fields of smutted oats."

This is the statement made by the U. S. Dept. of Agriculture in Miscellaneous Publication No. 21 - "Formaldehyde Seed Treatment for Oat Smuts."

Besides its use for treating oats, formaldehyde is used for treating seed of wheat, barley, rye, millet and sorghum to protect against smut; flax to protect against

seed-borne flax wilt; seed potatoes, to protect against diseases such as scab and black scurf; and for treating soil and miscellaneous vegetable seed.

The use of "P. A. C." Formaldehyde for these and other purposes is described in the 1934 booklet, "This Year Get the Full Market Price for Your Crops," issued recently by the R. & H. Chemicals Department of the du Pont Company. Copies are free on request.

DANGERS TO CHILDREN FROM PLAYING WITH BLASTING CAPS

Because of the increasing use of dynamite for agricultural purposes at the present time, we wish to call the attention of our readers to the dangers to children from playing with blasting caps. Hundreds of children are injured yearly from exploding blasting caps which they find in fields, quarries, along highways, and in the vicinity of other blasting operations.

The Institute of Makers of Explosives, of which the du Pont Company is a member, has been conducting a campaign since 1926 in an effort to educate the public to the dangers of blasting caps in the hands of children and irresponsible grown-ups. As a result, there has been a material decrease in the number of accidents during the years 1932 and 1933. There is still room for great improvement, however, and we are appealing to you to lend your efforts to this worthwhile campaign.

It has been found that a majority of the accidents occur in rural districts. As a result, many children are now facing the future with impaired eyesight. Some of them are blind. Fingers, hands and feet are mangled; and faces and bodies are badly lacerated.

It will be greatly appreciated if, in your important work, you stress not only the proper storage of dynamite caps, but the necessity of checking to see that all caps are accounted for following blasting operations, so that they are not left for curious little fingers.

EFFECT OF NEW IMPROVED CERESAN ON THE STANDS AND YIELDS OF GRAIN

Results of field studies by the Bayer-Semesan Company, cooperating with farmers in various sections, on the effects of certain seed treatments on the stands and yields of wheat, oats and barley, confirm the results secured, on a less extensive scale, in previous years.

The tests were conducted on farms, usually in the same field with a commercial grain crop. Planting was done by hand from envelopes, the furrows being opened with a hand plow, which was used also in the covering operation.

Rows were twenty feet long and were spaced approximately twelve inches apart. With a few exceptions, each treatment in the yield tests was replicated twenty-five times. Every third row was planted to untreated seed, so that each treated row had an untreated row for comparison immediately adjacent to it.

Data on stands and tillering were obtained by planting 60 seeds, spaced four inches apart, in a row twenty feet long. The number of replications was usually three.

Yield data for each row were secured by cutting and shipping the grain and part of the straw to the laboratory, where it was threshed, cleaned and weighed.

Eleven tests conducted in Illinois on the effect of New Improved Ceresan on the stands of oats showed an average increased stand of 10.7 percent over untreated seed. Twelve tests conducted in Illinois, Minnesota and North Dakota on the effect of New Improved Ceresan in the yield of oats showed an increase of 2.84 bushels per acre over untreated seed.

Six tests conducted in Illinois on the effect of New Improved Ceresan on the stands of barley showed an increased stand of 11.7 percent over untreated seed. Nine tests conducted in Illinois, Minnesota and North Dakota on the effect of New Improved Ceresan on the yield of barley, showed an increase of .45 bushels per acre over untreated seed.

Fourteen tests conducted in Minnesota and North Dakota on the effect of New Improved Ceresan on the stand and tillering of wheat showed an increase in stand of 6.41 percent over untreated seed. Fourteen tests conducted

in the same section on the effect of New Improved Ceresan in the yield of wheat, showed an average increase of 1.04 bushels per acre over untreated seed.

A USE FOR DYNAMITE ON THE FARM

This has been a very cold winter and there is, in many parts of the country, a great depth of frost in the ground. In many and varied locations on farms, it is essential to the run-off of water, or sloppiness around a farm yard, to have this frost broken up so that moisture can get into the soil beneath before the sun takes the frost out of the ground. This job can be conveniently done with dynamite, by drilling a hole about two-thirds of the way through the frost layer and placing a couple of sticks of dynamite, similar to any other subsoil operation.

A series of seven articles, which have attracted considerable attention, have recently been prepared by Gilbert F. Miles, director of research for the Bayer-Semesan Co. and former extension pathologist for the Pennsylvania State College.

These articles discuss:

Fighting the Stinking Smut or Bunt in Wheat
How to Get the Best in Barley
Protecting Oats Seed Before Planting
How to Guard Potato Crops Against Disease
Making Cotton Pay
Importance of Treating Corn to Reduce Seed-Borne Diseases.
How to Control Diseases of Sweet Potatoes.

We shall be glad to send to anyone who desires them, copies of these articles.

EDITOR.